Baton Rouge Community College

Academic Affairs Master Syllabus

Date Approved or Revised: July 22, 2008

Course Name: College Algebra (5-Hour Format)
Course Number: MATH 101

Lecture Hrs. 5 **Lab Hrs. 0** **Credit Hrs. 3**

Course Description: A five-hour class, equivalent to MATH 110, which meets the needs of students requiring additional class time to succeed. Particularly recommended for students who have not had algebra for some time or whose placement scores are at a level suggesting that the students would benefit from this format. Topics include complex numbers, quadratic equations, systems of linear equations, inequalities, functions, graphs, exponential and logarithmic functions.

Prerequisites: Placement by department or minimum grade of C in all prerequisite courses.
Co-requisites: None

Note: Credit will not be given for this course and Math 110.

Calculator Highly Recommended: TI83 or TI84 or Scientific

Learning Outcomes: Upon successful completion of this course, in written form with the aid of a scientific calculator the students will be able to:

- Solve polynomial, radical, rational, absolute value, exponential and logarithmic equations; solve systems of linear equations and equations of quadratic type;
- Evaluate functions, find rates of change, and write the equation of a line;
- Find the domain, range, intercepts, and asymptotes of a function;
- Perform operations on functions including compositions and inverses;
- Find the zeros of functions;
- Write the standard equation of a circle;
- Solve polynomial, absolute value, and rational inequalities;
- Graph linear, quadratic, radical, absolute value, exponential, and logarithmic functions; and
- Apply the basic properties and concepts of algebra to model real world applications.

General Education Learning Outcomes: This course supports the development of competency in the following areas. Students will:

- Think critically, collect evidence (statistics, examples, testimony) and make decisions based on the evidence, comprehend and analyze texts, and solve problems using methods of critical and scientific inquiry; and
- Organize, analyze, and develop useful information useful by employing mathematical principles.

Assessment Measures: The learning outcomes will be assessed by a comprehensive departmental final exam.

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- Instructor created exams and or homework.

Information to be included on the Instructors' Course Syllabi:

- ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.

- ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor's and/or the department's policy for make-up work. For example in a speech course, "Speeches not given on due date will receive no grade higher than a sixty" or "Make-up work will not be accepted after the last day of class."

- ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.

- ***General Policies*:** Instructors' policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.

- ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.

- ***Safety Concerns:*** In some programs this may be a major issue. For example, "No student will be allowed in the safety lab without safety glasses." General statements such as, "Items that may be harmful to one's self or others should not be brought to class."

- ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

Expanded Course Outline:

I. Equations and Inequalities
   A. Graphs and Graphing Utilities
   B. Linear Equations and Rational Equations
   C. Models and Applications
   D. Complex Numbers
   E. Quadratic Equations and Applications
   F. Other Types of Equations
   G. Linear Inequalities and Absolute Value Inequalities

II. Graphs and Functions
   A. Basic of Functions
   B. More on Functions and Their Graphs
   C. Linear Functions and Slope
   D. More on Slope
   E. Systems of Linear Equations (8.1)
   F. Transformations of Functions
   G. Combinations of Functions
   H. Inverse Functions
   I. Distance and Midpoint; Circles

III. Polynomial and Rational Functions
   A. Quadratic Functions
   B. Polynomial Functions and Their Graphs
   C. Dividing Polynomials; Remainder and Factor Theorem
   D. Rational Functions and Their Graphs
   E. Polynomial and Rational Inequalities

IV. Exponential and Logarithmic Functions
   A. Exponential Functions
   B. Logarithmic Functions
   C. Properties of Logarithms
   D. Exponential and Logarithmic Equations
   E. Exponential Growth and Decay; Modeling Data